

Work Order ID 52970

October 20, 2009 7:54:18 AM



Page 1

Item ID: D212-664-101

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Fwd

Start Date: 20/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

But

Date: 09-10-20 Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Draw Number | Draw Rev. | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|----------------|--------------|--------------|---------------|---------------|------------------|----------------|
| Draw Nbr | Revision Nbr | | | | | | | | |
| D212-664-141 | Rev C | | | | | | | | |
| 100 | | 0.00 | | | | | | | |
| | DOCUMENT CONTROL | | | | | | | | |
| DC | Memo | 0.00 | | | | | | | |
| Document Control | Photocopy bluefile and create labels as per PPP D212-664-101 CHG003 | | | | | | | | |
| 110 | | 0.00 | | | | | | | |
| | Pick Kit | | | | | | | | |
| Packaging | Packaging | | | | | | | | |
| Packaging | Memo | 0.00 | | | | | | | |
| 120 | | 0.00 | | | | | | | |
| | BENDING MACHINE - CROSSTUBES | | | | | | | | |
| CNC Bend 2 | Memo | 0.00 | | | | | | | |
| CNC Alpha 160 Bender | Bend tube as per Dwg D212-664-141 using CNC bender program 212-fw and Folio FT015 | | | | | | | | |

Sorlu/12

H for BG 09/11/17

9/11/17 RSP

(IX) MB 09-10-29

Work Order ID 52970

October 20, 2009 7:54:18 AM



Page 2

Item ID: D212-664-101

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Fwd

Start Date: 20/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

QC15- Crosstube Dimensional Check

0.00



⇒ Sorted



QC

Memo

0.00

Quality Control

140

Crosstubes

0.00



Crosstubes

Memo

0.00

Crosstubes

1-Drill pilot holes in tube as per Dwg D212-664-141 using drill Jig DT8548 & DT8549

2-Ream hole to finish size in tube as per Dwg D212-664-141 using drill Jig DT8548 & DT8549. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes.

3-Scribe part # and batch # using vibrating stylus as per Dwg D212-664-141

4-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-141

9-10-29

- 140 9-10-29

Work Order ID 52970

October 20, 2009 7:54:18 AM



Page 3

Item ID: D212-664-101

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Setup Start



Revision ID: C

Stop



Item Name: Crosstube Fwd

Start Date: 20/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Draw Number | Draw Rev. | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|----------------|--------------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|----------------|--------------|--------------|---------------|---------------|------------------|----------------|

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

Chemical Conversion Coat within 24 hours of bending and drilling

1 - - - - - AW 11/5/1030

160

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

=> 8 01/11/03

⊗ / - - - - -

170

Outsource process - NDT per QSI038 4.1

0.00



Outsource2

Memo

0.00

Outsource process - NDT

Liquid Penetrant Inspection as per QSI 038
Issue P/O: 1071P
LPI as per ASTM 1417 Level 2
Attach copy of NDT results to work order

c2

- - - - - 10/11/09

Work Order ID 52970

Page 4

October 20, 2009 7:54:18 AM

Item ID: D212-664-101

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Fwd

Start Date: 20/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

Receive & Inspect for Damage & Mat'l Certs
Packaging

0.00



Packaging

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

10/20/09 1

190

QCS- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

Inspect for damage & ensure results are as per Dwg D212-664-141

MA 09 11 09 1

Work Order ID 52970

October 20, 2009 7:54:18 AM



Page 5

Item ID: D212-664-101

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Fwd

Start Date: 20/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Draw Number | Draw Rev. | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|----------------|--------------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|----------------|--------------|--------------|---------------|---------------|------------------|----------------|

200

Spray Painting per QSI005 4.2

0.00



SprayPaint

SprayPaint

Memo

0.00

Spray Painting

1-Prime inside and outside crosstube as per QSI 005 4.2
2-Paint outside crosstube with White Imron as per QSI 005 4.2

PRIME:

Start Time: 11:00

Finish Time: 12:00

PAINT:

Start Time: 3:00

Finish Time: 4:30

RT 09-11-10

210

QC14- Inspect Spray Paint

0.00



QC

Memo

0.00

Quality Control

Then, Wrap in plastic bag to protect from scratches

09 11 11 11

Work Order ID 52970

October 20, 2009 7:54:18 AM



Page 6

Item ID: D212-664-101

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Fwd

Start Date: 26/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 32/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Draw Number | Draw Rev. | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|----------------|--------------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|----------------|--------------|--------------|---------------|---------------|------------------|----------------|

220

0.00



Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1- Lightly scuff the bonded area using a 320 grit sand paper and clean the area with 41058 wash 'n' wipe
2-Install supports with magnobond as per QSI 015 Adhere for 12 Hrs
A/R 6398 Magnobond Batch: 112417 exp: 01/2011

M 09 11 12 10

230

0.00



QC5- Inspect part completeness to step on W/O

QC

Memo

0.00

Quality Control

=> Serial 17

70 A _____

240

0.00



Pick Kit

Packaging

Memo

0.00

Packaging

9/11/17 10 SP

Work Order ID 52970



Page 7

October 20, 2009 7:54:18 AM

Item ID: D212-664-101

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Fwd

Start Date: 20/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 02/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

250

QC4- 100% Inspect kits for completeness

0.00



25011/17

QC

Memo

0.00

Quality Control



260

Packaging

0.00



0.00

Packaging

Memo

Packaging

Identify and pack for shipping as per PPP D212-664-101

Leve

9/11/18 @ SP

270

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/11/18

Bl 09-11-18

Picklist Print

October 20, 2009 7:54:24 AM

Page 1

Work Order ID: 52970

Parent Item: D212-664-101RevC

Parent Item Name: Crosstube Fwd



Comments:

Start Date: 20/10/2009

Required Date: 02/11/2009

Start Qty: 1.00

Required Qty: 1.00

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Remaining Qty To Pick | Qty Issued | Date Issued | Status |
|---|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
| D212-664- 101TRNRevC | | Manufactured | No | | | 110 | Each | 0.0000 | 1.0000 | | | |
|  | | | | | | | | | | | | |
| Crosstube Turning Detail | | | | | | | | | | | | |
| D3595-063-450RevA | | Manufactured | No | | | 230 | Each | 156.4584 | 4.2105 | | | |
|  | | | | | | | | | | | | |
| RUBBER CUSHION | | | | | | | | | | | | |

B-52827 MB 09-10-29

| <u>Warehouse</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|------------------|----------------|-----------------|
| <u>Location</u> | | |
| Main Warehouse | | |
| LG | 151.4894737 | |
| 50953 | 43.4894737 | |
| 52447 | 108 | |
| Main Warehouse | | |
| ST | 4.9689 | |
| 38959 | 2 | |
| 43210 | 2.59 | |
| 46465 | 0.3789 | |

ml 09 11 12

Picklist Print

Page 2

October 20, 2009 7:54:24 AM

Work Order ID: 52970



Parent Item: D212-664-101RevC



Parent Item Name: Crosstube Fwd

Start Date: 20/10/2009

Required Date: 02/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Remaining Qty To Pick | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
| MS21920-25 | | Purchased | No | | | 220 | Each | 176.0000 | 4.0000 | | | |
| | | | | | | | | | | | | |
| Clamp(per MIL-DTL-8783C) | | | | | | | | | | | | |

| <u>Warehouse</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|------------------|----------------|-----------------|
| <u>Location</u> | | |
| Main Warehouse | | |
| ST | 176 | |
| 107456 | 2 | |
| 108111 | 3 | |
| 108975 | 17 | |
| 109181 | 48 | |
| 109644 | 10 | |
| 111282 | 4 | |
| 111429 | 17 | |
| 112495 | 50 | |
| 112919 | 25 | |

mt 09 11 12

D2893-1RevB

Manufactured No

220

Each

44.0000

2.0000



2.75 Support

| <u>Warehouse</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|------------------|----------------|-----------------|
| <u>Location</u> | | |
| Main Warehouse | | |
| ST | 44 | |
| 25657 | 6 | |
| 47109 | 18 | |
| 47637 | 20 | |

mt 09 11 12

October 20, 2009 7:54:24 AM

Shop Packet Print

Page 2

Picklist-Print

Page 3

October 20, 2009 7:54:24 AM

Work Order ID: 52970



Parent Item: D212-664-101RevC



Parent Item Name: Crosstube Fwd

Start Date: 20/10/2009

Required Date: 02/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

| Component Item ID/ Item Name | Replacement Item ID | Mfg Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Remaining Qty To Pick | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|--------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
|---------------------------------|------------------------|--------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|

D3428-1RevA /

Manufactured

No

240

Each

25.0000

1.0000



Placard

9/11/17 SP

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST096

25

50790

25

240

Each

98.0000

4.0000

AN6-35A

Purchased

No



BOLT

12 SP
9/11/17 SP

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

98

112314

78

112805

20

240

Each

113.0000

4.0000

AN6-36A

Purchased

No



Bolt

4x SP
9/11/17 SP

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

113

109632

1

110382

2

111650

10

112314

100

4x SP

October 20, 2009 7:54:24 AM

Shop Packet Print

Page 3

Picklist Print

Page 4

October 20, 2009 7:54:25 AM

Work Order ID: 52970

Parent Item: D212-664-101RevC

Parent Item Name: Crosstube Fwd


Comments:

Start Date: 20/10/2009

Required Date: 02/11/2009

Start Qty: 1.00

Required Qty: 1.00

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Remaining Qty To Pick | Qty Issued | Date Issued | Status |
|---|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
| MS21042L6  Nut | | Purchased | No | | | 240 | Each | 649.0000 | 6.0000 | | 9/11/17 | SD |

| Warehouse | Loc Qty | Loc Code |
|-----------------|---------|----------|
| <u>Location</u> | | |
| Main Warehouse | | |
| ST | 649 | |
| 105077 | 22 | |
| 110002 | 5 | |
| 111548 | 22 | |
| 111578 | 400 | |
| <u>112492</u> | 200 | |

AN960JD616



Washer

Purchased

No

240

Each

870.0000 18.0000



9/11/17

SD

| Warehouse | Loc Qty | Loc Code |
|-----------------|---------|----------|
| <u>Location</u> | | |
| Main Warehouse | | |
| ST | 870 | |
| 112314 | 370 | |
| 112828 | 500 | |

18XSD

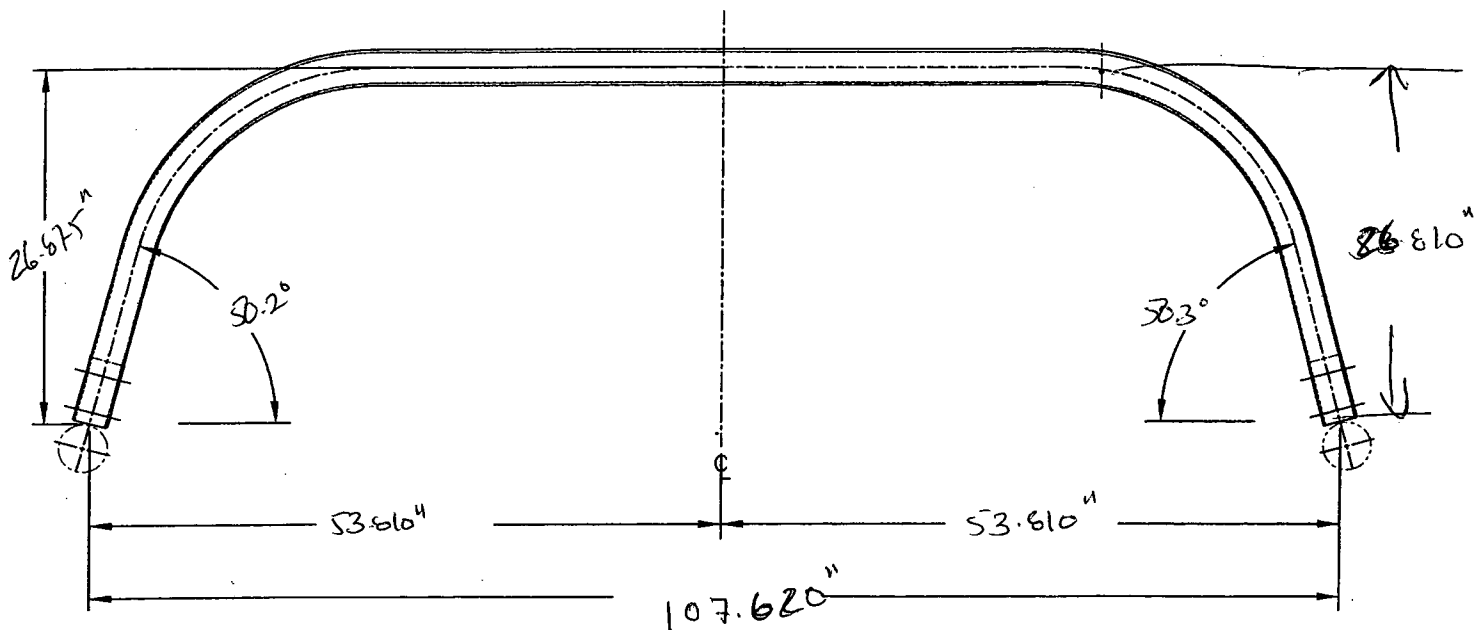
October 20, 2009 7:54:25 AM

Shop Packet Print

Page 4

| | | | |
|---|--|--------------|--------------|
| DART AEROSPACE LTD | | Work Order: | 52970 |
| Description: Crosstube High Fwd (205/212/412) | | Part Number: | D212-664-101 |
| Inspection Dwg: D212-664-141 Rev: C | | Page 1 of 1 | |

| Required Dimension | Min | Max |
|--------------------|--------|-------|
| Height | 26.79 | 27.05 |
| 1/2 Span | 53.59 | 53.85 |
| Angle | 49 | 52 |
| Total Span | 107.18 | 107.7 |



| Comments |
|----------|
| |
| |
| |
| |
| |

| | |
|-----------------|----------|
| QC15 Inspection | S |
| Date | 05/10/29 |

| Rev | Date | Change | Revised by | Approved |
|-----|----------|----------------------------------|------------|----------|
| A | 07.02.06 | New Issue | KJ/JM | |
| B | 07.05.31 | Dimensions updated per Dwg Rev C | KJ/JM | |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries



TOP COPY
RETURN TO
ENGINEERING
ROLLING C
TO ASSEMBLY
WITHOUT NOTICE
WORK ORDER
NO. 52970
BA 09-10-20

| | | | | | |
|----------|----------|----------|---|---|--------------|
| DESIGN | PH | DRAWN BY | PH | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| CHECKED | QP | APPROVED | PH | DRAWING NO. | REV. C |
| | | | | D212-664-141 | SHEET 1 OF 3 |
| DATE | | | | TITLE | |
| 07.03.08 | | | | XTUBE ASS'Y (205/212/412 HI FWD) NTS | |
| A | 00.12.12 | | NEW ISSUE | | |
| B | 05.02.04 | | ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES | | |
| C | 07.03.08 | | REMOVE -851 ABRASION STRIP; ADD MAGNOBOND 6398, CUSHION, REVERSE CLAMPS | | |

RELEASED

07.04.24

DEO ATTACHED

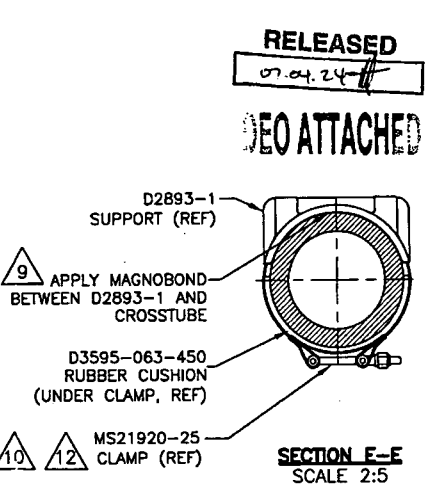
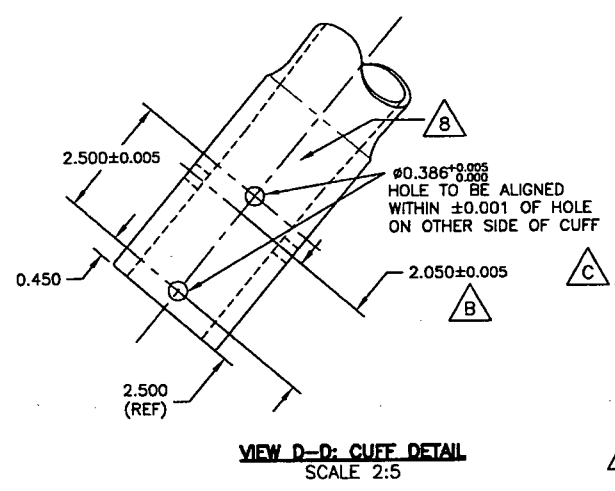
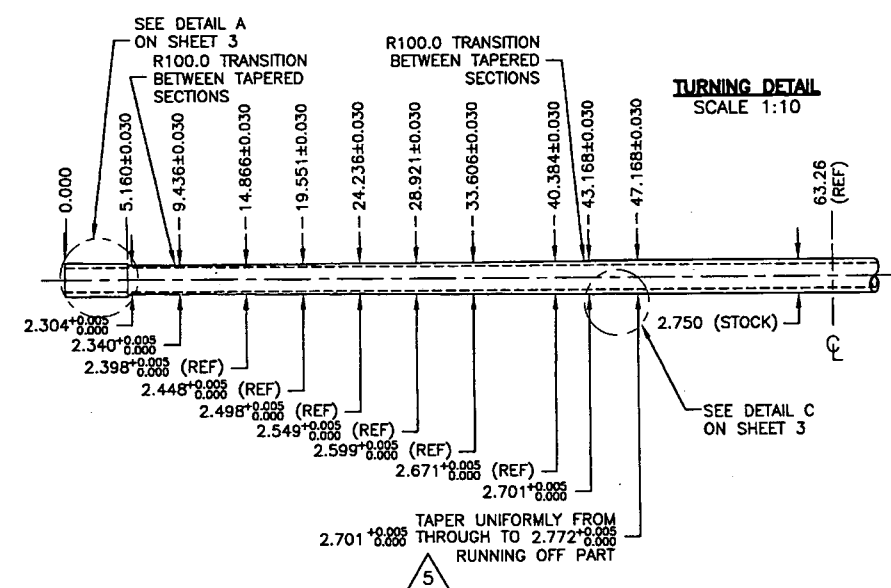
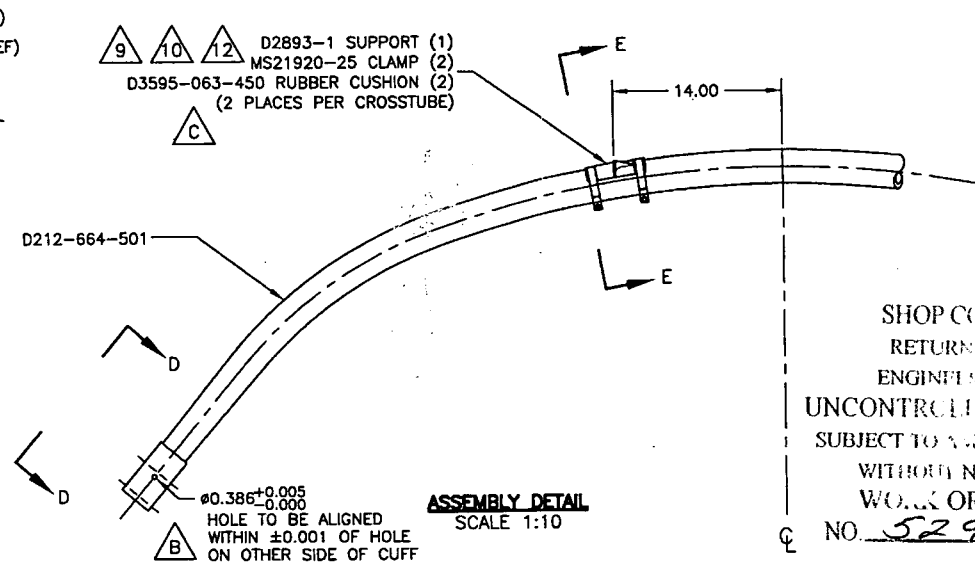
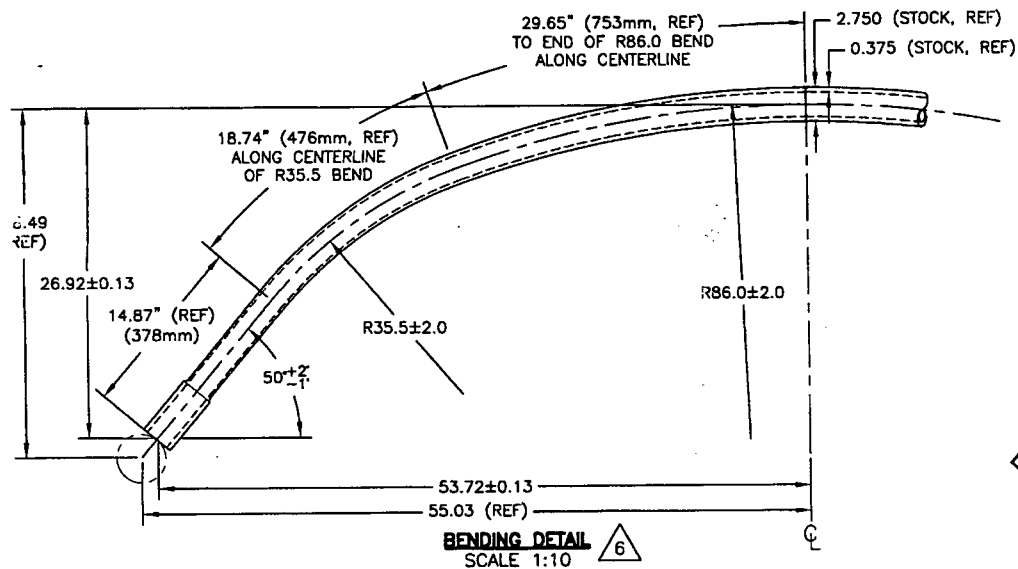
| Qty | Part Number | Description |
|-----|----------------|---|
| X | D212-664-141 | CROSSTUBE ASSEMBLY (205/212/412 HIGH FWD) |
| 1 | D6005-128 | CROSSTUBE |
| 2 | D2893-1 | SUPPORT |
| 4 | D3595-063-450 | RUBBER CUSHION |
| 4 | MS21920-25 | CLAMP (OR MS21920-26) |
| A/R | MAGNOBOND 6398 | ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE) |

GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 2) MATERIAL: MANUFACTURED FROM D6005-128
FINISHED LENGTH = 126.51±0.020
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE.
- 5) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 6) BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 7) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 8) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 9) INSTALL D2893-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 10) INSTALL MS21920-25 CLAMPS (OR -26) WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE D2893-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT
- 11) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 12) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

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WORK ORDER
NO. 52970

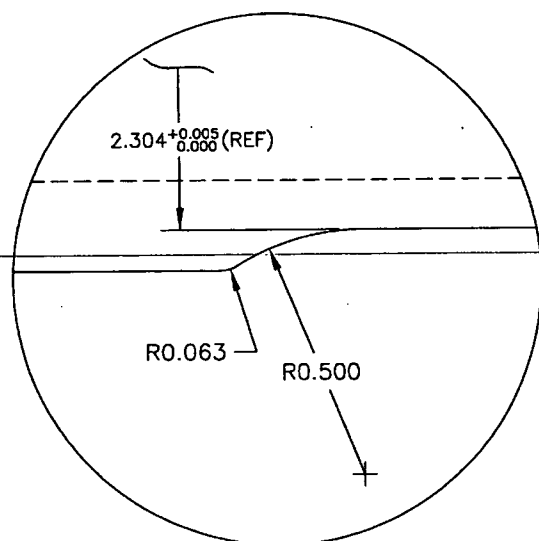
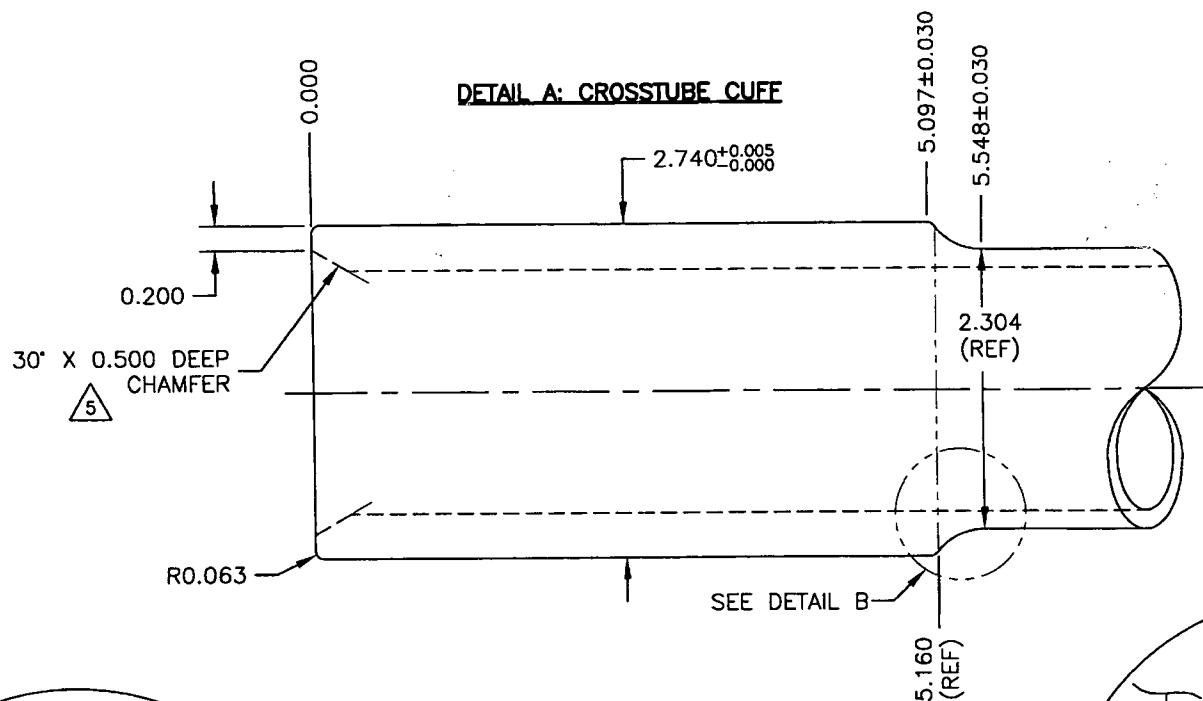
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07.04.24
SEO ATTACHED

| | | | | | | | |
|--|--|--|----|---------------|----|-----------------------------|--|
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| THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. | | CHECKED | GP | APPROVED | GP | DRAWING NO. D212-664-141 | REV. C SHEET 2 OF 3 |
| DATE 07.03.08 | | TITLE XTUBE ASS'Y (205/212/412 HI FWD) 1:10 | | SCALE 1:10 | | | |

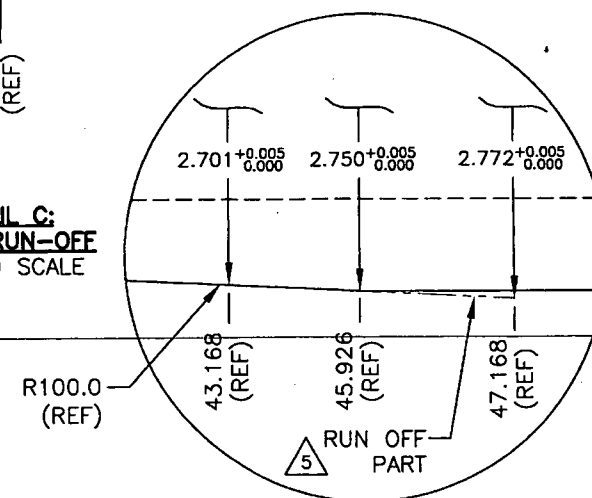
RELEASED
69-04-24 (P)
PER ECN 883

DEO ATTACHED

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WITHOUT NOTICE
WORK ORDER
NO. 52978



**DETAIL C:
TAPER RUN-OFF**
NOT TO SCALE



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| | | | |
|------------------|---|-----------------------------|--|
| DESIGN PH | DRAWN BY PH | DART | DART AEROSPACE LTD. HAMMERSLEY, ONTARIO, CANADA |
| CHECKED J | APPROVED [Signature] | DRAWING NO. D212-664-141 | REV. C SHEET 3 OF 3 |
| DATE 07.03.08 | TITLE XTUBE ASS'Y (205/212/412 HI FWD) | SCALE 1:1 | |

| | | | | | | | |
|-----------------------------|----------------------|-------------------------|---|--|--------------------------------|---------------------------|--------------|
| DRAWING NO. D212-664-141 | TITLE CROSSTUBE | REV. C | DART AEROSPACE LTD ENGINEERING ORDER | | D.E.O. NO. D212-664-141-C-1 | SHEET NO. SHEET 1 OF 1 | SCALE NTS |
| DRAWN <i>DP</i> | CHECKED <i>RS</i> | MFG. APPR. <i>RE</i> | APPROVED <i>WD</i> | | DE APPR. <i>TH</i> | | |
| DATE 09.05.01 | DATE 09.06.15 | DATE 09.06.15 | DATE 09/06/16 | | DATE 09/06/16 | | |

CHANGE:

ADD THE FOLLOWING CROSSTUBE ASSEMBLY:

| Part Number | Description |
|---------------|-----------------------------------|
| D212-664-141B | CROSSTUBE ASSEMBLY (214 HIGH FWD) |

THE D212-664-141B CROSSTUBE HAS THE SAME PARTS LIST AS THE D212-664-141 CROSSTUBE. HOWEVER, INSTALL THE SUPPORTS AS SHOWN IN FIGURE 1 OF THIS ENGINEERING ORDER. THE NEW KIT IS OTHERWISE ASSEMBLED PER THE D212-664-141 CROSSTUBE.

RELEASED
09/06/22

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. *52920*

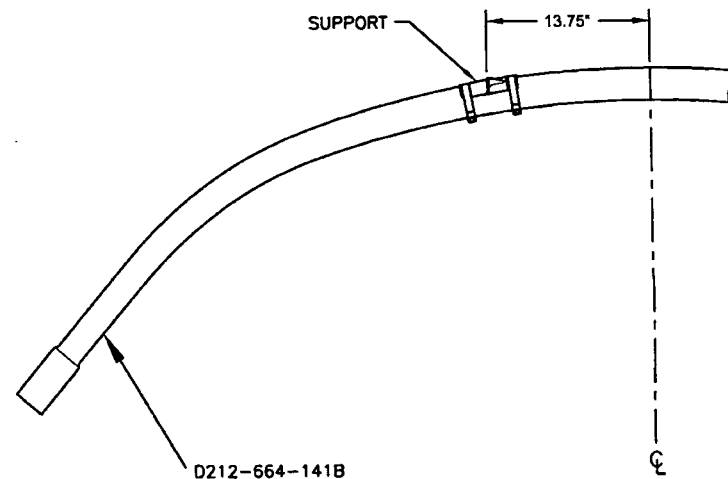


FIGURE 1 - SUPPORT INSTALLATION

5.0 PARTS LIST

5.1 HIGH GEAR CROSSTUBES

| Item | -101 | -201 | -203 | Part Number | Description |
|------|------|------|------|------------------|--|
| | X | | | D212-664-101 | CROSSTUBE INSTALLATION, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH FWD |
| | | X | | D212-664-201 | CROSSTUBE INSTALLATION, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH AFT |
| | | | X | D412-664-203 | CROSSTUBE INSTALLATION, 412 HIGH AFT |
| 1 | 1 | | | D212-664-141 | CROSSTUBE ASSEMBLY, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH FWD |
| 2 | | 1 | | D212-664-241 | CROSSTUBE ASSEMBLY, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K HIGH AFT |
| 3 | | | 1 | D412-664-243 | CROSSTUBE ASSEMBLY, 412 HIGH AFT |
| 10 | 2 | | | * D2893-1 | SUPPORT |
| 11 | 4 | | | * D3595-063-450 | RUBBER CUSHION |
| 12 | 4 | | | * MS21920-25 | CLAMP (OR MS21042-26) |
| 13 | 4 | | | AN6-35A | BOLT |
| 14 | 4 | | | AN6-36A | BOLT |
| 15 | 6 | | | MS21042L6 | NUT (OR MS21042-6) |
| 16 | 18 | | | AN960JD616 | WASHER |
| 20 | | 2 | | * D2940-1 | SUPPORT |
| 21 | | 4 | | * D3595-063-530 | RUBBER CUSHION |
| 22 | | 4 | | * MS21920-28 | CLAMP (OR MS21042-30) |
| 23 | | 4 | | AN6-40A | BOLT |
| 24 | | 2 | | AN6-41A | BOLT |
| 25 | | 6 | | MS21042L6 | NUT (OR MS21042-6) |
| 26 | | 18 | | AN960JD616 | WASHER |
| 30 | | | 1 | * D2896-1 | SUPPORT |
| 31 | | | 2 | * D2856-600-1009 | ABRASION STRIP |
| 32 | | | 2 | * D3595-063-570 | RUBBER CUSHION |
| 33 | | | 4 | * MS21920-28 | CLAMP |
| 34 | | | 2 | * MS21920-30 | CLAMP (OR MS21042-32) |
| 35 | | | 4 | AN6-40A | BOLT |
| 36 | | | 2 | AN6-41A | BOLT |
| 37 | | | 6 | MS21042L6 | NUT (OR MS21042-6) |
| 38 | | | 18 | AN960JD616 | WASHER |
| 39 | | | 2 | * D3189-1 | CHAFING SHIELD |
| 50 | 1 | 1 | | D3428-1 | PLACARD |

*REFERENCE ONLY. PARTS ARE INCLUDED IN D212-664-141/-241 OR D412-664-243 ASSEMBLIES ABOVE
NOTE: KITS INCLUDE EXTRA HARDWARE FOR COMPATIBILITY WITH BOTH DART AND BELL/AA
SKIDTUBES.

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Revision: F
Date: 08.09.05

52970



LIQUID PENETRANT TEST REPORT

P- 15307

PAGE 1 OF 1

CLIENT: DATA ACQUISITION DATE: NOV 5 - 2009 TIME: AM 6 PM 13

ATTENTION: ALLEN J. HANTEL ACUREN JOB NO.: 100-095002633

ADDRESS: 1270 ABEL BREEZ ST PO BOX NO.: 10711

ARKES BAY ONT WORK LOCATION: 1545P ARKES BAY ONT

K6H 3K7 ACCEPTANCE STD.: ASTM 1417 REV/DATE: 2007

PROJECT: F.P. C. ON CROSS TUBES

ITEM(S) EXAMINED: 10 UNITS

JOB DESCRIPTION: WET FLUORESCENT LIQUID PENETRANT INSPECTION PROCEDURE NO.: LT002 REV/DATE: --- TECHNIQUE NO.: LT002 REV/DATE: ---

PART NO.: --- MATERIAL: ALUMINUM THICKNESS: ---

SCOPE: CARRIED OUT 100% EXTERNAL

TEST DETAILS

METHOD: ☒ FLUORESCENT ☐ VISIBLE ☐ WATER WASH ☐ SOLVENT REMOVAL ☐ POST EMULSIFIER

FAMILY BRAND: MALAPLEX BLACK LIGHT SN: 1459 ☐ OUTPUT > 1000 μ W/cm² ☐ AMBIENT < 2 $^{\circ}$ C

PENETRANT: PL07 MINIMUM DWELL TIME: 45 MIN. LIGHTING EQUIP.: ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT 100 fc @ SURFACE

PENETRANT REMOVER: H00 MINIMUM DRY TIME: >10 MIN. OTHER: LABINO

DEVELOPER: SD 52 MINIMUM DWELL TIME: 10 MIN. LIGHT METER SN: --- CAL DUE DATE: DEC. 8.09

DEVELOPER TYPE: ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY

TEST SURFACE

SURFACE CONDITION: ☐ AS GROUND ☐ AS WELDED ☐ MACHINED ☐ SHOT BLASTED ☐ CLEAN BARE METAL

SURFACE TEMPERATURE: ☐ < -4 $^{\circ}$ C/20 $^{\circ}$ F ☐ -4 $^{\circ}$ C/20 $^{\circ}$ F TO 10 $^{\circ}$ C/50 $^{\circ}$ F ☒ 10 $^{\circ}$ C/50 $^{\circ}$ F TO 52 $^{\circ}$ C/125 $^{\circ}$ F ☐ > 52 $^{\circ}$ C/125 $^{\circ}$ F

| RESULTS- (<input type="checkbox"/> METRIC <input type="checkbox"/> IMPERIAL) | | ACCEPT | REJECT |
|---|------------------------|--------|--------|
| ITEM | COMMENTS | | |
| 1 | CROSS TUBE, W.O. 51935 | / | |
| 1 | CROSS TUBE, W.O. 51936 | / | |
| 1 | CROSS TUBE, W.O. 53314 | / | |
| 1 | CROSS TUBE, W.O. 53315 | / | |
| 1 | CROSS TUBE, W.O. 52970 | / | |
| 1 | CROSS TUBE, W.O. 52971 | / | |
| 1 | CROSS TUBE, W.O. 52859 | / | |
| 1 | CROSS TUBE, W.O. 52860 | / | |
| 1 | CROSS TUBE, W.O. 52972 | / | |
| 1 | CROSS TUBE, W.O. 52973 | / | |

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Standard of Care: In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE: Jan Tiley SIGNATURE: [Signature] DTR# E-85848

TECHNICIAN (SIGNATURE): [Signature] REPORT REVIEWED BY: ---

NAME (PRINT): Mike Johnson NAME: --- INITIALS: ---

CGSB LEVEL: 2 SNT LEVEL: 2 CGSB LEVEL: --- SNT LEVEL: ---

CGSB REG. NO.: 6066 CGSB REG. NO.: ---

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1053

PT Sept 2001